Appl. No. 10/069,507
Amdt. Dated January 22, 2004
Response to Notice of Non-Compliant Amendment dated January 20, 2004

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in this application.

1-17. (Cancelled).

18. (Currently Amended) Intake manifold (1) comprising a chamber, a plurality of intake pipes (2) in the form of duct portions connecting the manifold chamber with the heads and a device for regulating flow in said intake pipes comprising at least a control shaft (4) and valves (3) supported by said control shaft (4), said flow regulation device being integrated into the structure of manifold (1) and being rotatably mounted into bearings (6), said manifold (1) consisting of at least two complementary parts (1", 1"') joined one to the other, wherein the two parts (1", 1"') form complementary portions ~~at least of~~ said chamber, the bearings (6) being formed ~~onto~~ integrally with at least one of said parts (1", 1"') in an assembly area of said parts (2', 2" or 1", 1"') outside said intake pipes (2).

19. (Previously Presented) Manifold according to claim 18, wherein said bearings (6) are obtained by assembling said two complementary parts (1", 1"').

20. (Previously Presented) Manifold according to claim 19, wherein the control shaft (4) is fixed and positioned by elastically inserting said shaft (4) into said bearings (6, 12).

21. (Previously Presented) Manifold according to claim 18, wherein said bearings (6) are formed onto one (1") of said parts, said shaft (4) being blocked between said parts (1", 1"') without any contact with the other one (1"') of said two parts (1", 1"'), the other part (1"') preventing the shaft (4) from coming out of said bearings (6) after the assembly of the two parts (1" and 1"').

22. (Previously Presented) Manifold according to claim 19, wherein said bearings (6) are formed onto one (1") of said parts, said shaft (4) being blocked between said parts (1", 1"') without any contact with the other one (1"') of said two parts (1", 1"'), the other part (1"') preventing the shaft (4) from coming out of said bearings (6) after the assembly of the two parts (1" and 1"').

23. (Previously Presented) Manifold according to claim 20, wherein said bearings (6) are formed onto one (1") of said parts, said shaft (4) being blocked between said parts (1", 1"') without any contact with the other one (1"') of said two parts (1", 1"'), the other part (1"') preventing the shaft (4) from coming out of said bearings (6) after the assembly of the two parts (1" and 1"').

24. (Previously Presented) Manifold according to claim 18, wherein the control shaft (4) is "sandwiched" between the parts (1", 1"') constituting said manifold (1) in the assembly and connection area of said parts (1", 1"').

25. (Previously Presented) Manifold according to claim 19, wherein the control shaft (4) is "sandwiched" between the parts (1", 1"') constituting said manifold (1) in the assembly and connection area of said parts (1", 1"').

26. (Previously Presented) Manifold according to claim 18, wherein said bearings (7) are sealed by interposing a sealing element (8).

27. (Previously Presented) Manifold according to claim 19, wherein said bearings (7) are sealed by interposing a sealing element (8).

28. (Previously Presented) Manifold according to claim 24, wherein said bearings (7) are sealed by interposing a sealing element (8).

29. (Previously Presented) Manifold according to claim 18, wherein the control shaft (4) comprises at least a cylinder-shaped protuberance (9') cooperating with translation blocking stops (10) of said control shaft (4).

30. (Previously Presented) Manifold according to claim 19, wherein the control shaft (4) comprises at least a cylinder-shaped protuberance (9') cooperating with translation blocking stops (10) of said control shaft (4).

31. (Previously Presented) Manifold according to claim 20, wherein the control shaft (4) comprises at least a cylinder-shaped protuberance (9') cooperating with translation blocking stops (10) of said control shaft (4).

32. (Previously Presented) Manifold according to claim 21, wherein the control shaft (4) comprises at least a cylinder-shaped protuberance (9') cooperating with translation blocking stops (10) of said control shaft (4).

33. (Previously Presented) Manifold according to claim 24, wherein the control shaft (4) comprises at least a cylinder-shaped protuberance (9') cooperating with translation blocking stops (10) of said control shaft (4).

34. (Previously Presented) Manifold according to claim 26, wherein the control shaft (4) comprises at least a cylinder-shaped protuberance (9') cooperating with translation blocking stops (10) of said control shaft (4).

35. (Previously Presented) Manifold according to claim 18, wherein said two complementary parts are made of thermoplastic material and are assembled by vibration welding.

36. (Previously Presented) Manifold according to claim 19, wherein said two complementary parts are made of thermoplastic material and are assembled by vibration welding.

37. (Previously Presented) Manifold according to claim 20, wherein said two complementary parts are made of thermoplastic material and are assembled by vibration welding.

38. (Previously Presented) Manifold according to claim 21, wherein said two complementary parts are made of thermoplastic material and are assembled by vibration welding.

39. (Previously Presented) Manifold according to claim 24, wherein said two complementary parts are made of thermoplastic material and are assembled by vibration welding.

40. (Previously Presented) Manifold according to claim 26, wherein said two complementary parts are made of thermoplastic material and are assembled by vibration welding.

41. (Previously Presented) Manifold according to claim 29, wherein said two complementary parts are made of thermoplastic material and are assembled by vibration welding.

42. (Previously Presented) Manifold according to claim 18, wherein said regulation device is provided on one of its ends with a rotation coupling element connected with an actuator (14').

43. (Previously Presented) Manifold according to claim 19, wherein said regulation device is provided on one of its ends with a rotation coupling element connected with an actuator (14').

44. (Previously Presented) Manifold according to claim 20, wherein said regulation device is provided on one of its ends with a rotation coupling element connected with an actuator (14').

45. (Previously Presented) Manifold according to claim 21, wherein said regulation device is provided on one of its ends with a rotation coupling element connected with an actuator (14').

46. (Previously Presented) Manifold according to claim 24, wherein said regulation device is provided on one of its ends with a rotation coupling element connected with an actuator (14').

47. (Previously Presented) Manifold according to claim 26, wherein said regulation device is provided on one of its ends with a rotation coupling element connected with an actuator (14').

48. (Previously Presented) Manifold according to claim 29, wherein said regulation device is provided on one of its ends with a rotation coupling element connected with an actuator (14').

49. (Previously Presented) Manifold according to claim 35, wherein said regulation device is provided on one of its ends with a rotation coupling element connected with an actuator (14').

50. (Previously Presented) Manifold according to claim 29, wherein said regulation device extends transversally near one of the ends of the intake pipes (2) in the connection area of said intake pipes (2) with a wall (1') of the chamber of manifold (1), said bearings (6, 7, 12) and said translation blocking stops (10) of the control shaft (4) being formed onto said wall (1') of the chamber of manifold (1).

51. (Previously Presented) Manifold according to claim 35, wherein said regulation device extends transversally near one of the ends of the intake pipes (2) in the connection area of said intake pipes (2) with a wall (1') of the chamber of manifold (1), said bearings (6, 7, 12) and said translation blocking stops (10) of the control shaft (4) being formed onto said wall (1') of the chamber of manifold (1).

52. (Previously Presented) Manifold according to claim 42, wherein said regulation device extends transversally near one of the ends of the intake pipes (2) in the connection area of said intake pipes (2) with a wall (1') of the chamber of manifold (1), said bearings (6, 7, 12) and

said translation blocking stops (10) of the control shaft (4) being formed onto said wall (1') of the chamber of manifold (1).

53. (Previously Presented) Manifold according to claim 29, wherein said regulation device extends near one of the ends of the intake pipes (2) in the area where said manifold (1) is fixed onto the heads.

54. (Previously Presented) Manifold according to claim 35, wherein said regulation device extends near one of the ends of the intake pipes (2) in the area where said manifold (1) is fixed onto the heads.

55. (Previously Presented) Manifold according to claim 42, wherein said regulation device extends near one of the ends of the intake pipes (2) in the area where said manifold (1) is fixed onto the heads.

56. (Previously Presented) Intake manifold according to claim 50, wherein the assembly of the parts (1", 1"') constituting manifold (1) results in a sealed case (15) around the connection areas of the assembly of said intake pipes (2) with the wall (1') of manifold (1).

57. (Previously Presented) Intake manifold according to claim 56, wherein said sealed case (15) is completed in an area of passage (15') for the portion of the control shaft (4) getting out and supporting the rotation coupling element connected with the actuator (14') by means of a ring-shaped axial plug (16) shrink-fitted or tight-fitted or welded into said passage (15').

58. (Previously Presented) Intake manifold according to claim 56, wherein the sealed case (15) formed by assembling the two parts (1" and 1"') of manifold (1) is closed in an area of passage (15') for the rotation coupling element (14) of said control shaft, by interconnection on the outer surface of said two parts (1" and 1"'), by vibration welding, by means of a third hollow part (17) closing said rotation coupling element (14) and an axially sealed bearing (6, 12).

59. (Previously Presented) Intake manifold according to claim 57, wherein the regulation device fully extends within the sealed case (15), said shaft (4) not going across the

welding assembly areas or lines, the two valves (3) at the opposite ends of shaft (4) being mounted protrudingly and the valve (3) positioned near passage (15') being provided with an axial blind channel (18) housing by insertion the end of handling bar (14") constituting said rotation coupling element (14).

60. (Previously Presented) Intake manifold according to claim 58, wherein the regulation device fully extends within the sealed case (15), said shaft (4) not going across the welding assembly areas or lines, the two valves (3) at the opposite ends of shaft (4) being mounted protrudingly and the valve (3) positioned near passage (15') being provided with an axial blind channel (18) housing by insertion the end of handling bar (14") constituting said rotation coupling element (14).

61. (Previously Presented) Method for producing an intake manifold, comprising the steps of:

providing a first part (1") of an intake manifold (1), said first part being made of thermoplastic material ;

installing on said first part and within portions of suitable supporting or guiding bearings (6, 12), a regulation device comprising a control shaft (4) and a plurality of valves (3) arranged each within a through opening or a part passage (2') of corresponding intake pipe (2);

providing at least a second part (1"') of the intake manifold (1), said second part being made of thermoplastic material;

arranging said second part in assembling position with the first part (1") blocking control shaft (4) with valves (3); and

assembling by vibration welding said at least two parts (1", 1"') of intake manifold (1).

62. (Previously Presented) Method according to claim 61, wherein said regulation device is mounted onto said first part (1") and the assembly of the two parts (1" and 1"') results in a sealed case (15) around said assembly except for a drawing passage (15'), the latter being sealed when coupling the rotation coupling element (14) with the control shaft (4).